Claims:

1.   A   computer   system   for   electronic   data
processing, having:
        - a first data processing unit;
        - a second data processing unit;
        - a data transmission memory device which is
connected on the input side to the first data
processing unit and on the output side to the second
data processing unit, which data transmission memory
device is set up to transmit data records from the
first data processing unit to the second data
processing unit, wherein the data transmission memory
device has a first memory region and a second memory
region, wherein the first memory region and the second
memory region are set up to store one data record in
each case, and wherein the data transmission memory
device is set up in such a way that the transmission of
a data record to be transmitted from the first data
processing unit to the second data processing unit is
performed in accordance with the following steps:
        - transferring the information as to whether the
second data processing unit is ready for data
transmission to the data transmission memory device;
        - deciding, based on the information as to
whether the second data processing unit is ready for
data transmission, whether copying is released;
        - transferring to the first memory region and
storing in the first memory region the data contained
in the data record to be transmitted;
        - copying the data record stored in the first
memory region into the second memory region if copying
is released;
        - transferring the data record stored in the
second memory region to the second data processing
unit.

2.   The computer system as claimed in claim 1, wherein copying is released if no data is transferred from the second memory region to the second data processing unit.

3.   The computer system as claimed in claim 1 or 2, wherein, in the step of transferring to the first memory region and storing in the first memory region the data contained in the data record to be transmitted, only data which is not contained in the data record stored in the first memory region is transmitted.

4.   The computer system as claimed in one of claims 1 to 3, wherein the first data processing unit is a standard processor and the second data processing unit is a coprocessor, and the data to be transmitted by means of the data transmission memory device is required for the execution of a program instruction by the coprocessor.

5.   The computer system as claimed in one of claims 1 to 4, wherein the first memory region is a first memory bank and the second memory region is a second memory bank, and data can be transmitted from the first memory bank into the second memory bank by means of a transfer bus.

6.   The computer system as claimed in claim 5, wherein the first data processing unit is connected by means of a system bus to the first memory bank, and the transfer bus has a greater bandwidth than the system bus.

7.   The computer system as claimed in one of claims 1 to 4, wherein the data transmission memory device has a plurality of memory cells having a first memory element and a second memory element in each case, wherein each memory element is set up to store a single

bit and wherein, when the data record stored in the first memory region is copied into the second memory region, the bit stored in the respective first memory element of a memory cell is copied into the respective

5   second memory element of the memory cell by means of a local coupling.

8.   The computer system as claimed in one of claims 1 to 7, wherein both memory regions are situated on one

10   memory chip.

9.   The computer system as claimed in one of claims 1 to 8, wherein the coprocessor is a graphics, image processing or mathematical coprocessor.